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ABSTRACT

Proposed United States immigration reforms are founded on the assumption that illegal immigration can be significantly curbed by reducing economic incentives to migrate. Effects of these reforms, however, are not the same for all undocumented workers. Data from 61 rural Mexican households in Michoacan were used to explore which undocumented Mexico-U.S. migrants and migrant households were likely to be most influenced by changes in U.S. immigration laws. Findings indicated that, generally, undocumented immigrants were from households with strong economic motives for sending migrants to the United States but which could afford, or controlled, the risks and costs associated with illegal migration. Undocumented migrants most vulnerable to changes in immigration policy included individuals lacking the resources for illegal migration. These "borderline" migrants were generally from the poorest migrant households and likely to be concentrated disproportionately in California's agricultural sector. Undocumented workers most resilient to immigration reforms were firmly integrated into U.S. labor markets. They originated from Mexican households with family contacts in the United States and little internal migration experience. The cost of enforcing new immigration laws will likely increase substantially if new policies succeed in removing borderline immigrants from the undocumented migrant work force. (JMM)

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IMPACTS OF IMMIGRATION IN CALIFORNIA

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POLICY DISCUSSION PAPER

Selectivity of Undocumented Mexico-U.S. Migrants and Implications for U.S. Immigration Reform

by

J. Edward Taylor

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Selectivity of Undocumented Mexico-U.S. Migrants and Implications for U.S. Immigration Reform

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2100 M Street, N.W.
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FOREWORD

Issues concerning the level and composition of immigration to the United States have assumed prominent positions on the agendas of many policymakers. Perhaps nowhere are immigration's effects more keenly felt than in California, where one-quarter of all foreign-born persons in the United States currently reside.

This Policy Discussion Paper series is aimed at improving the quality of the policy-making process through a broad distribution of research findings on the consequences of immigration to California. These dissemination activities are part of The Urban Institute's larger project, Study of the Impacts of Immigration in California, funded by the Weingart Foundation, the Atlantic Richfield Foundation, the Ahmanson Foundation, and the Times Mirror Foundation. Important policy issues being addressed include (a) economic and fiscal issues associated with immigration, (b) the character and tempo of assimilation processes, and (c) the impact on California of proposals for immigration reform. All major immigrant groups to California—not just Mexicans—are being included, as are the comparative effects in northern as well as in southern California.

The Urban Institute's objective is to make a positive contribution to the policy process. It is committed to getting its work into the hands of people who can use it and rely upon it to make judgments of their own on future policy directions. Related titles are listed at the end of this paper.

Thomas J. Espenshade
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SELECTIVITY OF UNDOCUMENTED MEXICO-U.S. MIGRANTS
AND IMPLICATIONS FOR U.S. IMMIGRATION REFORM

Executive Summary

Proposed U.S. immigration reforms are founded on the assumption that illegal immigration to the United States can be significantly curbed by reducing economic incentives to migrate. The effects of these reforms on migration decisions, however, would not be the same for all undocumented workers. In this paper data from a sample of rural Mexican households are used to explore what types of undocumented Mexico-U.S. migrants and migrant households are likely to be most influenced by changes in U.S. immigration laws.

The findings indicate that, on average, undocumented Mexico-U.S. migrants are from households in Mexico with strong economic motives for sending migrants to the United States but which can afford, or else control, the risks and costs associated with illegal Mexico-U.S. migration. Undocumented migrants who appear most vulnerable to changes in U.S. immigration policy include individuals who lack the resources or else the incentive to withstand an increase in the risks and costs of working illegally in the United States. These "borderline" Mexico-U.S. migrants, on average, are from the poorest Mexico-U.S. migrant households in Mexico and are likely to be concentrated disproportionately in the agricultural sector of the California economy. Illegal immigrant workers who appear most resilient to U.S. immigration reforms are firmly integrated into U.S. labor markets. They originate from households in Mexico that have family contacts in the United States and little internal migration experience. The cost of enforcing new U.S. immigration laws is likely to increase substantially if new immigration policies succeed in removing the borderline migrants from the undocumented migrant work force.

INTRODUCTION

Proposed U.S. immigration reforms are founded on the assumption that illegal immigration to the United States can be significantly curbed by reducing economic incentives to migrate. Immigration reform and control acts currently before Congress are aimed at lowering the income gains that undocumented workers can expect to receive in the United States, while increasing the risk that they will fail in illegally entering and remaining in this country. Proposed laws attempt to achieve this result through a combination of stepped-up border patrols and economic sanctions against firms that knowingly hire undocumented foreign workers. The effects of such reforms, however, will not be the same for all undocumented workers. The same economic logic that underlies immigration reform and control acts predicts that the persons most swayed by the proposed measures would be those who could least afford, or else have the least economic incentive to withstand, the new risks and costs created by immigration reforms.

This paper explores what types of undocumented Mexico-U.S. migrants and migrant households are likely to be most influenced by changes in U.S. immigration laws. The first part of the paper draws from existing empirical studies to examine the motives for illegal Mexico-U.S. migration and their implications for migrant selectivity. In the second part, a multinomial logit technique is utilized to isolate the characteristics that distinguish undocumented Mexico-U.S. migrants from Mexican internal migrants and nonmigrants in a 1982 sample of rural Mexican households. Migration probability estimates are then used in the third part to identify "borderline Mexico-U.S. migrants," that is, individuals whose attachment to U.S. labor markets appears to be weakest. Borderline migrants in general are people for

whom the difference between the net gains from illegal Mexico-U.S. migration and work alternatives in Mexico is positive but small. They also include individuals for whom Mexico-U.S. migration would no longer be affordable if the associated risks or costs were to increase, or if the rewards from migrating illegally to the United States were to diminish.

MOTIVES FOR ILLEGAL MIGRATION AND THE SELECTIVITY OF MIGRANTS

Economic incentives for migration between Mexico and the United States appear to be overwhelming. However, differences in earnings on the two sides of the border cannot alone account for the current numbers of undocumented Mexican workers who cross the U.S.-Mexico border each day. Looking only at differences in average earnings for Mexican workers in Mexico and in the United States, one might conclude that many more undocumented workers ought to be seeking work in the United States than statistics currently indicate. Why, one might ask, do some rural Mexican workers migrate to the United States while others stay behind, evidently content with vastly inferior earnings in rural Mexico? Clearly a more complex human calculus is at work, distinguishing movers from stayers and, ultimately, shaping the size and characteristics of Mexico-U.S. migration flows. A knowledge of the decision-making process that underlies illegal Mexico-U.S. migration—of who is first chosen and who is a reluctant, or "borderline," migrant—could reveal a great deal about which migrants, if any, are most vulnerable to U.S. immigration reforms and which households in Mexico would be hardest hit by a tougher U.S. stance against illegal immigration.

No single data source exists for obtaining reliable estimates of the economic gains and risks associated with illegal migration to the United

States, the characteristics of undocumented migrants, and the social and demographic forces underlying Mexico-U.S. migration decisions. Nevertheless, a rough profile of undocumented Mexico-U.S. migrants and an analysis of workers' motives for migrating to the United States can be pieced together from a number of Mexican rural community studies. Mexico-U.S. migrants are overwhelmingly of rural origin, with the majority coming from towns and villages in six Mexican states: Durango, Guanajuato, Jalisco, Michoacan, San Luis Potosi, and Zacatecas (Cross and Sandos, 1981; Ranney and Kossoudji, 1983; and North and Houstoun, 1976).[1] Studies of migrant-sending communities in Mexico have been done by researchers from a diversity of disciplines and with a wide variety of research interests.

In addition to these community studies, a comprehensive survey of return migrants was conducted throughout Mexico in December 1978 and January 1979 by the Centro Nacional de Información y Estadísticas del Trabajo (CENIET) of the Mexican Secretaría del Trabajo y Previsión Social. These data have been analyzed by Ranney and Kossoudji (1983). They do not include persons who have never migrated to the United States, nor do they include migrants who were in the United States at the time of the survey. Nevertheless, the data provide accurate statistical sketches of the return Mexico-U.S. migrant population that are useful as benchmarks for comparing with results of individual community-level studies.

Expected Income Motives for Mexico-U.S. Migration

For many rural Mexican workers the economic incentives for working all or part of the year in the United States are striking. Studies document large

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[1]For a historical account of the factors leading to high out-migration from these states see Cross and Sandos (1981).

disparities between earnings in Mexico and Mexican migrant wages in the United States. A study by Cornelius (1976) of nine small communities in the Mexican state of Jalisco estimated that average Mexico-U.S. migrant wages were $2.50 to $3.00 per hour in U.S. agriculture and $4.00 to $5.00 per hour in U.S. manufacturing--six to ten times the minimum Mexican agricultural wage of $0.46 in 1975 dollars. The majority of migrants in the Cornelius survey had worked in the United States illegally. A study of illegal migrants apprehended by the U.S. Immigration and Naturalization Service (INS), conducted in the same year by North and Houstoun (1976), estimated that average migrant wages were $2.34 per hour. The 1978 CENIET data show that return migrants earned an average of $23.00 per day ($2.87 per hour) while in the United States, compared with average daily wages of only 106.78 pesos, or $4.70 at the 1978 exchange rate, in Mexico.

These figures may seriously underestimate average differences between Mexican and U.S. earnings. Actual wages received in rural Mexico often are below the minimum agricultural wage, particularly for hired workers on small, family-run farms. Moreover, rural employment is highly seasonal; work is often available only during the peak labor (for example, planting and harvesting) seasons. The CENIET data on average daily wages of return migrants in Mexico take account of the unemployed. However, most workers in the sample analyzed by Ranney and Kossoudji spent only part of the year in the United States. If these workers tended to migrate during seasons of low employment in Mexico, their reported wages while in Mexico would overstate average Mexican earnings. Thus the real difference between average U.S. wages and average wages in Mexico is probably considerably greater than that reported by migrants. Finally, a dramatic deterioration of the exchange rate

between the Mexican peso and the U.S. dollar since 1981 has significantly widened the gap between Mexican migrant earnings in the United States and rural wages in Mexico. Between 1978, the date of the CENIET survey, and 1982, for example, the value of the peso plummeted more than 76 percent against the dollar. As a result, the minimum agricultural wage in Mexico, measured in U.S. dollars, fell 17.2 percent. This means that, even before considering any increases in migrants' U.S. wages, earnings below the minimum agricultural wage in Mexico, or differences in unemployment between the two countries during this period, wages for Mexican workers in the United States were seven times those of workers in rural Mexico in 1982, with migrants earning no more than $3.23 per day in Mexico. This disparity appears to have accelerated with even more dramatic peso devaluations in recent years.[2]

Other Economic Motives for Migration

Differences in expected earnings between Mexico and the United States are not the only economic factors influencing migration between the two countries. Coupling migration with village work can be an effective way to reduce income variability, including the risk of having one's income fall below a minimum subsistence level (David, 1974; Stark and Levhari, 1982). Migrant earnings in the United States generally do not vary with changes in Mexican agricultural earnings. A household that receives income from Mexico-U.S. migrants is therefore in a better position to protect itself against drops in farm income caused by crop failure and other misfortunes than a

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[2]Wage disparities for Mexican workers in rural Mexico and in the United States are estimated on the basis of U.S. wage data from the CENIET survey reported in Ranney and Kossoudji (1983); minimum daily wages for regular day, working males appearing in the International Labor Organization's Yearbook of Labor Statistics (1984); and exchange rates reported in the United Nations Statistical Yearbook (1984).

household that receives all its income from agricultural work in Mexico. As a result, Mexico-U.S. migration has become an important form of income insurance for many rural Mexican households.

Roberts (1982) concluded that farmers' income risk was critical for explaining observed differences in migration patterns from four rural communities in Central Mexico. In the poorest communities, where farm incomes were insufficient for the survival of small households, short-term off-farm work and permanent migration to Mexican urban areas were commonplace. However, farm incomes were too low to finance the costlier and riskier alternative of sending migrants to the United States. In a more commercially developed area, by contrast, higher farm incomes were used to support periodic migration, including short-term migration to the United States. Migrants, in turn, provided their households with off-farm income which partially offset the risks associated with agricultural modernization, including farmers' dependence on purchased inputs and monetary sources of income.

This income insurance function of migration is particularly important in rural Mexico because small farmers can obtain only partial crop insurance from the Aseguradora Nacional, the state-run insurance company. Insurance is available only to cover agricultural loans from Mexican banks, not to compensate farmers for losses in income during poor harvest years. The almost complete absence of credit and social welfare institutions in rural Mexico creates still other important forms of economic dependence on Mexico-U.S. migration. Migrant earnings are relied upon in Mexico to finance investments on and off the farm, as social security in parents' old age, and occasionally as a substitute for a welfare system to provide rural households with a minimal income when such income is not available from other sources.

Selectivity of Undocumented Mexico-U.S. Migrants

If decisions to migrate to the United States are motivated primarily by economic considerations, any factor that significantly influences a household's economic gains from migration or that reduces migration risks is likely to have an important effect on the household's propensity to send migrants to the United States. An economic model of migration decisions leads directly to a set of predictions about what sorts of individuals, from what types of households, are the most likely candidates for wage-labor migration to the United States (a formal model is developed in Taylor, 1984 and 1986). The limited data available suggest that, on average, Mexico-U.S. migrants are those individuals who are most likely to succeed in providing their households with net economic gains as migrant workers in the United States. They originate from households that (a) are sufficiently dependent on securing additional income to warrant investing in migration by one or more members, and (b) can afford or else control the costs and risks inherent in illegal migration. In addition to these purely economic considerations, a number of other social and cultural factors may also influence the decision to migrate to the United States.

The Migrants. Workers who enter the United States illegally from Mexico are overwhelmingly young and male. Estimates of the percentage of males among illegal Mexican migrant workers range from 67 percent to 91 percent (see Massey and Schnabel, 1983; Dagodag, 1975; and Ranney and Kossoudji, 1983). Estimated median ages of illegal migrants from Mexico aged fifteen years and older are in the middle to late twenties. The CENIET study of return migrants showed an average age of thirty-two years. Without a doubt, Mexico-U.S. migration is dominated by individuals in the prime of their working life.

These findings are not surprising when one considers the nature of the U.S. jobs for which the demand for undocumented migrant labor is greatest, the risks and rigors of illegal entry into the United States, and the income opportunities available to Mexico-U.S. migrants in their communities of origin.

The primary demand for Mexican migrant labor historically has been and is to this day in agriculture: the CENIET study found that 47.3 percent of return migrants had worked as farm laborers while in the United States. A similar figure--49.3 percent--was estimated by North and Houstoun for their sample of apprehended Mexico-U.S. migrants. During the bracero program (1942-1964), able-bodied, working-age males were actively recruited in rural north and west central Mexico in response to massive shifts of U.S. native labor out of agriculture. U.S. participation in World War II and the Korean conflict resulted in a dramatic loss of farm labor. Later, educational opportunities and expansion of more attractive employment in industry continued to lure native workers in the United States away from low-paying, unstable agricultural work. More recently the demand for low-cost labor in U.S. manufacturing has claimed an increasing share of the Mexican immigrant labor force, and, although males still far outnumber females, a growing number of women now migrate illegally to the United States (Reichert and Massey, 1980; Dinerman, 1982).

Median education levels of undocumented Mexico-U.S. migrant workers range from four to seven years in three studies surveyed by Massey and Schnabel (1983), while return migrants in the CENIET survey average only 4.2 years of schooling. Low educational attainment among Mexico-U.S. migrants reflects the fact that employment opportunities for this group are concentrated overwhelmingly in low-wage, low-skill sectors of the U.S. economy.

Economic considerations in Mexico also help explain the age, sex, and educational composition of Mexico-U.S. migrant flows. Household heads typically perform an important administrative role on the farm, and holders of "ejidos," or reform sector lands, are required to work their lands themselves or else risk having them reallocated to other villagers. The potential costs to the household of a prolonged absence of the household head, therefore, are likely to be large. These considerations help account for the overall youthfulness of Mexico-U.S. migrants. With regard to low educational attainment among undocumented Mexico-U.S. migrants, while rewards for schooling are generally small for illegal migrant workers in the United States, they are likely to be considerably larger in Mexican urban areas. Thus, internal migration, rather than undocumented migration to the United States, is likely to be the preferred alternative for better-educated villagers.

A key question in the controversy surrounding illegal immigration is whether Mexican migrants are largely permanent settlers or "sojourners" temporarily residing and working in the United States. The youthfulness of undocumented Mexico-U.S. migrants and the available data on migrants' average length of stay in the United States have been cited as evidence that undocumented migrant workers do not tend to settle permanently in this country.[3] It

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[3]Average stays of undocumented migrants in the United States are estimated at six to twelve months. (See North and Houstoun, 1976; Bustamante, 1977; Cornelius, 1976; Reichert and Massey, 1979; and Ranney and Kossoudji, 1983.) These studies are based on interviews with migrants who have either returned to Mexico (Ranney and Kossoudji) or who were apprehended in the United States (North and Houstoun, Bustamante). Their estimates of migrant durations in the United States are biased downward to the extent their samples of migrants tend, on average, to have shorter durations in the United States than migrants who had avoided apprehension and migrants who had not returned to Mexico as of the time the interviews were held. For duration data from village-based studies see Cornelius (1976) and Reichert and Massey (1979).

is likely, however, that experience in the United States has a positive effect on one's economic success as an undocumented migrant worker, and hence, on the incentive to continue working in this country. Empirical studies (such as Massey, 1984) show that undocumented workers are more likely to work in relatively steady, high-paying manufacturing jobs the more experience and personal contacts they accumulate in the United States. Less-experienced migrants, on the other hand, are much more likely to work in U.S. agriculture, where average wages are lower and where availability of employment is less secure. Migrants' social and cultural ties with the United States are also likely to strengthen the more time they spend in this country. In a study of migration from four communities in the Mexican states of Jalisco and Michoacan, Massey (1984) found:

> Of those that begin migrating, some proportion will inevitably become regular seasonal migrants, travelling to the United States for wage labor year after year. . . . Of those that become recurrent migrants, another proportion will ultimately develop social and economic ties leading to their permanent settlement in the United States . . . deeply integrated into the social and economic fabric of U.S. society.

Massey's study estimates that 32 percent of rural migrants and 41 percent of urban migrants settle in the United States within ten years of their first trip to the United States.

Migrant Households. Certain household characteristics are also likely to have an important impact on households' potential economic gains from Mexico-U.S. migration versus work in Mexico, their need to send migrants to the United States, and their capacity to finance migration. Mexico-U.S. migrants in general do not originate from households at the very top nor at the very bottom of the rural income distribution (Cross and Sandos, 1981:76). Households at the top of their village income distribution, in general, have

fewer motives for sending illegal migrants to the United States than households at the bottom and middle of the income distribution. The former typically enjoy both income-earning opportunities and social status without having to make the material and psychological sacrifices associated with sending family members clandestinely into an unfamiliar foreign labor market. At the other income extreme, although the poorest rural households might stand to benefit significantly from Mexico-U.S. migration, they often lack the financial resources and economic security to risk sending members illegally across international frontiers. Members of these households are more likely to supplement their family's income through seasonal migration within Mexico, often returning home to assist in critical agricultural tasks on the family farm.

Numerous other factors at the household level also influence Mexico-U.S. migration and may even overwhelm the income considerations mentioned above. Foremost among these are what researchers have called "migrant kinship networks," or contacts with relatives already residing in the United States. Such contacts can assist new migrants with everything from the illegal border crossing to job placement once the migrant is safely in the United States. Bonds of kinship and, in some instances, friendship and compatriotism typically link particular rural households with specific worksites in the United States (Massey, 1984; Mines, 1981). The role of kinship ties in promoting international migration is not new. Oscar Handlin (1973), in his classic account of nineteenth century European migrations to the United States, writes:

> From outposts in the New World came advice and assistance. Across the Atlantic the accumulation of immigrants created a magnetic pole that would for decades continue to draw relatives and friends in a mighty procession.

Similar familial ties underly much of the present-day undocumented migration between Mexico and the United States. Mines (1981:14) writes:

> the kinship/friendship network provides the basic structure within which migrants move to and find work in the United States. Although it is difficult for a community to create the necessary migratory infrastructure (i.e., border settlements, U.S. colonies and U.S. job contacts), once in place, this infrastructure makes cross-border movement within networks self-feeding and difficult to stop.

Past migration by villagers to particular U.S. destinations therefore encourages future migration by other villagers to those same locations. As migration networks develop, migration tends to spread "like a contagion," becoming highly localized and centralized in both sending and receiving areas (Swanson, 1979). Households that under general circumstances could not afford to send migrants to the United States often are able to do so if these contacts exist. The strategic role of kinship networks in driving illegal migration to the United States is particularly troubling to U.S. policymakers concerned about controlling the flow of undocumented immigrants while at the same time responding to American farmers' seasonal labor needs. Evidence now indicates that, although many U.S. migrant kinship networks predate the bracero program, the latter was instrumental in enabling rural Mexican households to forge new migration networks and to reinforce existing ones. These networks, in turn, have served as a conduit for the large-scale flow of undocumented migrants to the United States since the mid-1960s (Massey, 1984; Mines, 1981).

Other household traits are likely to play a secondary though still important role in driving Mexico-U.S. migration. For example, a larger family size, other things being equal, increases a household's consumption requirements and hence the need for additional sources of income to complement

farm earnings. A large household, particularly one with several adult members, is also better equipped to diversify its income sources: while one member migrates, other members can absorb that person's duties on the household-farm. In this way, the opportunity cost to the household of sending a migrant to the United States, in terms of lost farm earnings, is largely reduced or eliminated. The importance of having adult children on the farm to "fill in" for migrants has been noted for one central Mexican village by Dinerman (1982).

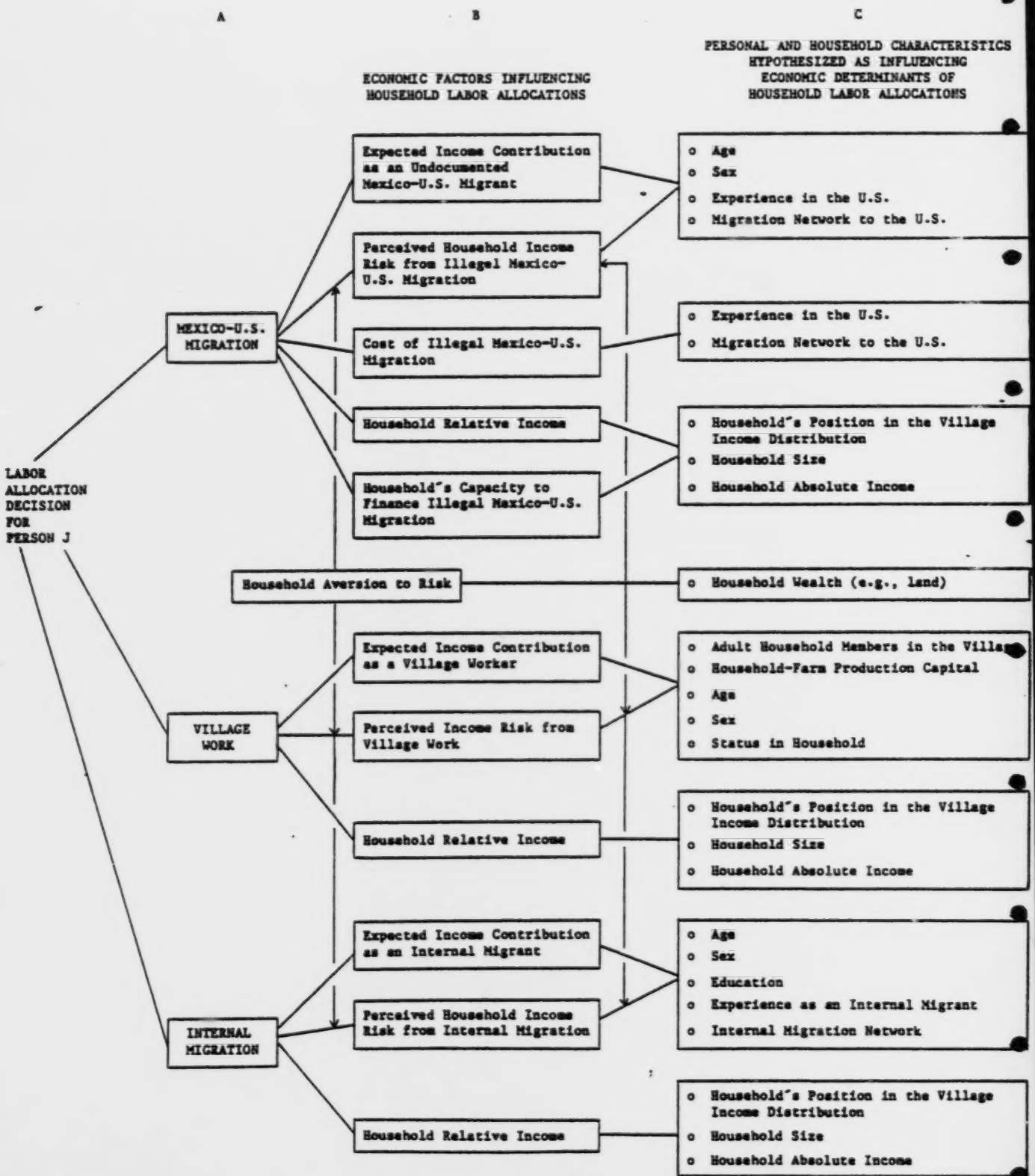
An Economic Model of Migration Decisions

Figure 1 illustrates the hypothesized linkages between observable individual and household characteristics and the economic benefits to the household from migration. Economic factors shaping Mexico-U.S. migration decisions, outlined earlier, include expected income gains from illegal migration to the United States and from competing activities; risk, or what households perceive as the variability of income gains from Mexico-U.S. migration and other activities; migration costs; household income relative to incomes of other households in the village; and the capacity of the household to finance Mexico-U.S. migration in the absence of efficient credit markets. These economic factors appear in column B of the figure.

Each economic factor, in turn, is likely to be influenced by selected characteristics of the individual or the household, as explained above. Personal and household characteristics hypothesized to influence economic determinants of migration appear in column C of figure 1. Age, sex, migration experience, migration networks, and, in the case of internal migration, education are all hypothesized to influence individuals' income contributions to their households as migrants. Migration experience and

Figure 1

Hypothesized Influences of Personal and House Characteristics on Economic Motives for Migration


A
B
C
ECONOMIC FACTORS INFLUENCING HOUSEHOLD LABOR ALLOCATIONS
PERSONAL AND HOUSEHOLD CHARACTERISTICS HYPOTHESIZED AS INFLUENCING ECONOMIC DETERMINANTS OF HOUSEHOLD LABOR ALLOCATIONS
LABOR ALLOCATION DECISION FOR PERSON J
MEXICO-U.S. MIGRATION
VILLAGE WORK
INTERNAL MIGRATION
Expected Income Contribution as an Undocumented Mexico-U.S. Migrant
Perceived Household Income Risk from Illegal Mexico-U.S. Migration
Cost of Illegal Mexico-U.S. Migration
Household Relative Income
Household's Capacity to Finance Illegal Mexico-U.S. Migration
Household Aversion to Risk
Expected Income Contribution as a Village Worker
Perceived Income Risk from Village Work
Household Relative Income
Expected Income Contribution as an Internal Migrant
Perceived Household Income Risk from Internal Migration
Household Relative Income
o Age
o Sex
o Experience in the U.S.
o Migration Network to the U.S.
o Experience in the U.S.
o Migration Network to the U.S.
o Household's Position in the Village Income Distribution
o Household Size
o Household Absolute Income
o Household Wealth (e.g., land)
o Adult Household Members in the Village
o Household-Farm Production Capital
o Age
o Sex
o Status in Household
o Household's Position in the Village Income Distribution
o Household Size
o Household Absolute Income
o Age
o Sex
o Education
o Experience as an Internal Migrant
o Internal Migration Network
o Household's Position in the Village Income Distribution
o Household Size
o Household Absolute Income

networks are also likely to reduce the costs associated with migration, particularly illegal migration to the U.S.

A household's relative income and its resources available to finance migration by household member j are represented by the household's absolute income from sources besides person j; by its position in the village income distribution implied by this absolute income level; and by the household's size, which reflects its consumption needs. A person's income contribution as a nonmigrant is likely to be affected by his or her age and sex; by the household's productive capital (for example, land), which enhances the productivity of labor on the household-farm; and by the number of adult household members available to work on the farm.

Each labor allocation entails some degree of risk, as shown by the second box under each labor category in column B. The effect of risk on household labor decisions depends upon the household's willingness to participate in risky labor activities, as illustrated by the arrows emanating from the box labeled "Household Aversion to Risk" in the center of the figure. Following a common proposition of economic theory on risk and uncertainty, household risk aversion is hypothesized to be inversely related to household wealth. That is, the wealthier a household is, the more likely it is to take on a given level of risk. Household income risks under the three labor allocations are interrelated. They depend on the variability of person j's contributions to household income, the variability of household income from other sources, and the correlation between the two. The interrelationships between income risks corresponding to each labor allocation are illustrated by arrows along the right side of column B.

The economic benefits associated with illegal Mexico-U.S. migration can be viewed as a function of the individual and household characteristics appearing in the corresponding boxes in column C. This function can be represented by a composite index $B_{US}(x)$, which measures the economic benefits to the household from Mexico-U.S. migration by an individual whose personal and household characteristics are given by x. Likewise, we can let $B_{Mex}(x)$ index the economic benefits associated with internal migration, and $B_0(x)$ index the economic benefits from nonmigration. Such indices are known as "strict utility functions" in the psychology literature (Luce and Suppes, 1965).

It is easy to see that the probability that a person with characteristics x will be observed as an undocumented Mexico-U.S. migrant, Prob(US), is just the probability that the benefits from Mexico-U.S. migration are greater than both the benefits from internal migration and the benefits associated with nonmigration. Formally, this probability can be represented as:

$$\text{Prob(US)} = \text{Prob}[B_{US}(x) > B_{Mex}(x) \text{ and } B_{US} > B_0(x)] \qquad (1)$$

By the same reasoning, the probability that this same person will be observed as an internal migrant, Prob(Mex), is

$$\text{Prob(Mex)} = \text{Prob}[B_{Mex}(x) > B_{US}(x) \text{ and } B_{Mex} > B_0(x)] \qquad (2)$$

and the probability of nonmigration, Prob(0) is

$$\text{Prob(0)} = \text{Prob}[B_0(x) > B_{US}(x) \text{ and } B_0 > B_{Mex}(x)] \ . \qquad (3)$$

From (1), (2), and (3) it is evident that the greater the economic benefits from illegal Mexico-U.S. migration relative to other labor activities, the

higher the probability that individuals will be observed as undocumented Mexico-U.S. migrants and, conversely, the lower the probability that they will be observed as internal migrants or nonmigrants.

Tradition, Culture, and Mexico-U.S. Migration. Tradition and culture undoubtedly play an important role in shaping the magnitude and direction of migration flows. Often sociocultural influences on migration are closely intertwined with economic ones, with the result that the former can rarely be isolated from the latter. Several researchers have identified a "community tradition" of Mexico-U.S. migration which at times appears to assume a ritualistic character. In villages where Mexico-U.S. migration is particularly pervasive, "going north" as an undocumented migrant often is viewed as a sort of "rite of passage" for adolescent adult males. Bonds with fellow villagers in the United States facilitate migration by helping new migrants maintain their identity in a foreign land while at the same time adapting to their new surroundings. These social support mechanisms sometimes become institutionalized in the form of social events that periodically bring together fellow villagers working in the United States (Massey, Durand, Gonzalez, and Alarcon, 1985). Thus contacts with family and friends in the United States can be important economically but also socially and psychologically in facilitating Mexico-U.S. migration, by reducing the "psychic costs" of living and working in an alien environment.

A melding of sociocultural and economic interpretations also surrounds sex patterns of Mexico-U.S. migration. The relatively low incidence of Mexico-U.S. migration among females can be linked to historical patterns of migrant labor demand in the United States and of migrant recruitment in Mexico, which have tended to focus on male, rather than on female, workers.

Young male workers have tended to migrate to the United States alone or else accompany other male migrants. By leaving dependents behind, migrants have been able to circumvent the additional cost of supporting family members in the United States while at the same time keeping as low a profile as possible to avoid detection by U.S. immigration authorities. Weist (1973) has observed that in rural Mexico males become independent of their parents earlier than females. This suggests that there could be a culturally determined interaction between age and sex in explaining migration decisions, although such an interaction has not been tested empirically. The question of whether females are less likely in general to migrate than males, or simply less likely to be Mexico-U.S. migrants, can be explored by examining Mexico-U.S. migration in the context of other migration decisions.

Summary

The preceding discussion has sketched a profile of the "typical" undocumented Mexico-U.S. migrant and household. Mexico-U.S. migrants are likely to originate from rural households in the middle-income range, containing relatively large numbers of adult members and possessing close ties with kin at U.S. destinations. The migrants themselves are likely to be young, male (although increasingly female in recent years), and with low levels of completed schooling. The next part of this paper uses the economic model developed above to explore the relationship between personal and household characteristics and the probabilities of undocumented Mexico-U.S. migration, internal migration, and nonmigration in a sample of rural households from the state of Michoacán, Mexico.

EMPIRICAL ANALYSIS

A multinomial logit technique was used to identify the characteristics that distinguished undocumented Mexico-U.S. migrants from Mexican internal migrants and nonmigrants in a sample of rural Mexican households surveyed in the winter of 1983. The households are located in the Pátzcuaro region of the state of Michoacán, approximately 200 kilometers southeast of Guadalajara and 1800 kilometers from the Mexico-Arizona border. The sample consists of 414 adult individuals in 61 households, each observation representing a separate allocation of household labor. For each individual j, data were collected on an array of personal characteristics (sex, age, completed schooling, status in the household as either a household head or nonhead, and recent migration experience in the United States and Mexico as of January 1982) and household attributes (household size and age composition, landholdings, and the presence of family members outside the village in Mexico and in the United States at the start of 1982; and 1982 income from all sources besides person j). These variables correspond to the individual and household characteristics identified in the first part of this paper as the socioeconomic factors most likely to influence Mexico-U.S. migration decisions.

Data were also gathered on all labor activities in which each individual participated during 1982. On the basis of these data, individuals were classified as village stayers if they were not labor migrants in 1982, as internal migrants if they were migrant workers (not commuters) in Mexico at any time in 1982, and as undocumented Mexico-U.S. migrants if they left the village to work illegally in the United States at any time during the year. The minimum stay outside the village for either type of migrant was

approximately three weeks. Only a small handful of legal Mexico-U.S. migrants were observed; these were removed from the data before estimation. The migrant labor categories are mutually exclusive: no internal migrant in the sample also migrated to the United States in 1982 or vice versa.

Several transformations of variables describing personal and household characteristics were included in the logit estimation to capture suspected nonlinearities between these variables and migration probabilities. The square of age was included to account for likely differences in the effect of age on migration propensities across age groups. An age-sex interaction term was used to capture differences in the effect of sex on the probability of migrating for different age groups. Three transformations of the income variable were included to account for differences in the influence of household income upon migration at different absolute income levels and at different ends of the village income distribution. These transformations include the square of the absolute household income variable, a measure of household income positions relative to those of other households in the relevant village,[4] and the square of the latter. Definitions of explanatory variables are provided in table 1.

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[4]The relative income variable measures a household's position in the village income distribution. The measure used in this study is similar to the measure proposed by Stark (1984) for measuring "relative deprivation," or the incomes of which a household is deprived within its reference group. It is sensitive not only to household income rankings but also to the dispersion of income across households. Let $F(Y^i)$ denote the share of village households with income less than or equal to Y^i, and let Y^h be the highest village income. The relative income of household i was calculated as the negative of the relative deprivation measure used by Stark (1984):

$$RELY^i = -\sum_{y=y^i}^{y^h} [1-F(Y)] \quad .$$

Table 1

Definition of Variables

Dependent Variable

$$d = \begin{cases} 1 \text{ if the individual did not participate in labor migration} \\ 2 \text{ if the individual was observed as an internal migrant} \\ 3 \text{ if the individual was observed as a Mexico-U.S. migrant} \end{cases}$$

Household Characteristics

SIZE = household size

ADULTS = number of adult household members in the village

LAND = household landholdings (hectares)

Y = total household income from sources other than household member j

YSQ = Y squared

RELY = household relative income position in the village, calculated using income Y and formula in footnote 4

RELYSQ = RELY squared

MEXNET = 1 if a family member was residing outside the village in Mexico at the start of 1982; 0 otherwise

USNET = 1 if a family member was residing in the United States at the start of 1982; 0 otherwise

Individual Characteristics

AGE = age

AGESQ = AGE squared

SEXAGE = sex (1 if male, 0 if female) times AGE

ED = highest level of schooling completed

HEAD = 1 if the individual is a household head; 0 otherwise

MEXEXP = number of years in adult life in which the individual worked at least some time as an internal migrant

USEXP = number of years in adult life in which the individual worked at least some time as a Mexico-U.S. migrant

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For purposes of estimating the multinomial logit, the indices of benefits acruing from illegal Mexico-U.S. migration [$B_{US}(x)$] and internal migration [$B_{Mex}(x)$] relative to the benefits of nonmigration are represented as linear functions of the characteristics x, including the transformations described above. That is,

$$B_{US}(x) = \sum_k \beta_{US,k} x_k$$

and (4)

$$B_{Mex}(x) = \sum_k \beta_{Mex,k} x_k \quad .$$

In the logit probability formulation, the probability that a person is observed as an undocumented Mexico-U.S. Migrant, Prob(US), is given by[5]

$$\text{Prob(US)} = \frac{\exp(\sum_k \beta_{US,k} x_k)}{1 + \exp(\sum_k \beta_{US,k} x_k) + \exp(\sum_k \beta_{Mex,k} x_k)} \quad . \qquad (5)$$

Results

The coefficients β_{US} and β_{Mex} were estimated simultaneously using the multinomial logit procedure in LIMDEP. Results of the estimation are summarized in table 2. The second and third columns for each migrant category present estimates of the coefficients $\beta_{US,k}$ and $\beta_{Mex,k}$ in the benefit indices given by (4). They correspond to the effect of explanatory variables on the benefits associated with each migration activity relative to nonmigration. They are therefore closely related to the effect of the explanatory variables

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[5]Properties of the multinomial logit are examined in Theil (1969) and Maddala (1983). A discussion of the use of the multinomial logit in economic problems similar to the one addressed here is available in MacFadden (1976) and Domencich and MacFadden (1975).

Table 2

Logit Estimates of the Influence of Personal and Household Characteristics on Migration Decisions

Variable	Estimated Coefficient[a]	
	Mexico-U.S. Migration	Internal Migration
INTERCEPT	-17.665 (-4.537)	-12.101 (-4.92)
SIZE	0.252 (1.375)	0.039 (0.290)
ADULTS	0.639 (2.278)	0.340 (1.755)
LAND	-0.434 (-0.964)	-0.007 (-0.189)
Y	0.877 (1.518)	0.375 (0.865)
YSQ	-0.047 (-0.999)	-0.007 (-0.206)
RELY	-0.651 (-2.074)	-0.596 (-2.857)
RELYSQ	0.026 (1.499)	0.034 (2.864)
MEXNET	-0.410 (-0.741)	0.553 (1.072)
USNET	4.018 (4.314)	-0.599 (-1.441)
AGE	0.389 (2.234)	0.383 (3.491)
AGESQ	-0.006 (-1.969)	-0.006 (-3.401)
SEXAGE	0.041 (2.178)	0.011 (0.808)
ED	-0.094 (-1.051)	0.227 (3.771)
HEAD	-9.458 (-3.077)	0.041 (0.049)
MEXEXP	0.209 (1.779)	0.482 (5.494)
USEXP	0.542 (5.201)	0.183 (2.099)

a. The figures in parentheses are t-statistics. Log-likehood = -174.94.

on the probability that a person is observed in each migrant category versus the probability that the person does not migrate.[6]

The empirical findings provide a clear picture of what distinguishes undocumented Mexico-U.S. migrants from nonmigrants and internal migrants. They also indicate what types of rural Mexican households are most likely to send members illegally to the United States. Undocumented migrant households, all other things being equal, do not tend to be the very poorest nor the very richest households in their villages. As household absolute income increases, so does the propensity for sending migrants to the United States, as illustrated by a significant positive coefficient of 0.877 on income for the Mexico-U.S. migrant group. Higher-income households, on average, are better able to afford the high costs and risks of sending a migrant illegally to the United States. However, as household income rises relative to that of other households in the village, this increase in relative income tends to reduce the household's incentive to participate in illegal Mexico-U.S. migration. The estimated coefficient on relative income is negative and significant at the 0.04 level. Thus households that enjoy favorable income opportunities and economic status in their respective communities are significantly less likely to sponsor undocumented Mexico-U.S. migrants than households at the middle and bottom of their village income distribution.

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[6]The actual effect of a small change in variable x_k on the probability of being observed at place d*, P(d*), denoted $\partial P(d^*)/\partial x_k$, is given by

$$\partial P(d^*)/\partial x_k = P_0(d^*)\,[\beta_{d^*,k} - \sum_d \beta_{d,k} P_0(d)] \quad ,$$

where $P_0(d)$ denotes the probability of being at place d before the small change in x_k. Thus $\partial P(d^*)/\partial x$ depends not only on $\beta_{d^*,k}$ but also on all other variables that have a role in explaining the initial probabilities $P_0(d)$, along with their coefficients.

Stark and Taylor (1986) have also explored the possibility of a "relative deprivation" motive for Mexico-U.S. migration, arguing that a principal motive for migration may be to improve one's income position relative to that of others in the relevant reference group (for instance, the village). The negative effect of relative income on Mexico-U.S. migration is smaller for households at the very bottom of the income distribution, as indicated by a significant positive coefficient on the term RELYSQ.[7] The primary concern in the most-deprived households is likely to be subsistence, and the benefits of participating in illegal Mexico-U.S. migration for these households do not appear to justify the associated risks and costs.

A number of other striking differences are evident between Mexico-U.S. migrant and nonmigrant households. Migration kinship networks, or family contacts, in the United States are among the most dramatic factors encouraging undocumented Mexico-U.S. migration. The average individual from the average household is six times more likely to be observed as an illegal Mexico-U.S. migrant if that person has close relatives already residing in the United States. This result provides strong statistical support for the arguments by Massey (1984), Mines (1981), and others that kin networks serve as an important conduit for undocumented migration into the United States. Undocumented migrant households tend also to be large, with other adult members present in the village to absorb the household-farm duties of those who migrate.

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[7]As household income falls relative to income in other village households, the probability of Mexico-U.S. migration increases except in the poorest 14.8 percent of households in the sample.

The findings on personal characteristics of undocumented migrants are generally consistent with the studies cited in the first part of this paper. The logit results, however, make it possible to compare Mexico-U.S. migrant characteristics with the traits of individuals who do not migrate to the United States.

Mexico-U.S. migrants are predominantly young compared to nonmigrants in Mexico. Their probability of being observed as illegal migrant workers in the United States increases with age up to thirty-two and rapidly decreases thereafter. The data show an interesting interaction between age and sex in explaining Mexico-U.S. migration. A dummy variable for sex (1=male) was included initially in the logit equation. It was insignificant in explaining internal migration but had a large positive effect on Mexico-U.S. migration, with a significance level of 0.05. Thus economic and sociocultural deterrents to internal migration by females are not evident in the data. Such deterrents are specific to illegal migration into U.S. labor markets, where the demand for Mexican migrant labor traditionally has favored male agricultural workers. When the interaction term between sex and age was also included in the equation, it was insignificant in explaining internal migration, but had a large positive influence on Mexico-U.S. migration with a significance level of 0.025. Moreover, the dummy variable for sex lost all significance in explaining Mexico-U.S. migration once the interaction term was included. The effect of sex on Mexico-U.S. migration is therefore not uniform over all age groups in the sample. Older groups of males are increasingly more likely to be Mexico-U.S. migrants than females in the same age groups. The effect of sex on Mexico-U.S. migration is much smaller for younger villagers whose prime working years coincide with an opening of job opportunities for undocumented female migrants in the United States, particularly in manufacturing.

Household heads are less likely than other household members to engage in international migration. Administrative responsibilities on the family farm and other obligations in the village generally preclude household heads from migrating to the United States, which generally entails a relatively large commitment of both time and capital.

Rewards for schooling, it was noted earlier, are likely to be small for illegal migrant workers in the United States compared with returns for schooling in Mexican cities and towns. The logit findings are fully consistent with the view that little incentive exists for better-educated villagers to migrate illegally to the United States. Completed years of schooling are insignificant in explaining undocumented Mexico-U.S. migration. The education variable is, however, highly significant in explaining internal migration. Better-educated villagers are much more likely to migrate to destinations in Mexico than to remain in the village or to migrate illegally to low-skill labor markets in the United States.

A person's experience as an undocumented migrant in the United States is one of the most significant variables explaining Mexico-U.S. migration. The results for U.S. experience in table 2 show clearly that the more time a person has spent in the United States, the more likely that person is to be observed as a Mexico-U.S. migrant worker. The average undocumented Mexico-U.S. migrant who had been in the United States five years, for example, was nearly eight times more likely to be observed in the United States during 1982 than an average Mexico-U.S. migrant with only one year of experience in the United States. This finding supports Massey's (1984) conclusion that Mexico-U.S. migrants' social and economic ties with the United States strengthen considerably over time. Interviews with undocumented migrant workers who have

recently arrived in the United States indicate, however, that these workers usually do not come with the intention of settling permanently in this country (Cornelius, 1978). Interestingly, the probability of Mexico-U.S. migration is also positively related to a person's experience as an internal migrant. It is likely that some workers from low-income rural Mexican households have used internal migration work as a means of financing illegal Mexico-U.S. migration.

Several similarities are apparent between Mexico-U.S. migrants and internal migrants, as well as between the types of households that send migrants to the two destinations. Internal migrants tend to originate from households with adult members present to "fill in" for them on the family farm. Households are less likely to sponsor internal migrants as their income increases relative to other village incomes. These variables' effects on internal migration, however, are considerably weaker than their effects on Mexico-U.S. migration. Like their counterparts in the United States, internal migrants in 1982 were young, with the likelihood of migrating internally increasing with age up to thirty-one years and declining thereafter. Also like their counterparts in the United States, internal migrants were more likely to be observed outside the village in 1982 the more experience they had accumulated at their destinations. There is evidence, therefore, that for both types of migrants in the sample, economic and social ties with migrant destinations tend to strengthen over time.

As for illegal Mexico-U.S. migrants who did return to Mexico, the more time these individuals had accumulated in the United States, the more likely they were to be observed as internal migrants in 1982. Accustomed to relatively high-paying jobs in the United States, return Mexico-U.S. migrants may simply be reluctant to accept work at village wages. It is perhaps more

likely, however, that the same shortage of income opportunities that initially motivated these individuals to leave the village as Mexico-U.S. migrants may also have encouraged them, upon returning to Mexico, to seek work as internal migrants.

The similarities between Mexico-U.S. migrants and internal migrants ends here. Household heads, who are highly unlikely to participate in international migration, are no less likely to migrate internally than are other household members. This may reflect differences in opportunity costs between internal and international migration and the relative ease with which household heads who migrate internally can return periodically to their village to perform their duties on the household-farm and in the village community.

Two other salient features distinguish the two migrant groups. A household's absolute income level is positively related to undocumented international migration, which usually entails a large element of risk and a large initial cost associated with crossing the border and seeking work in the United States. By contrast, no significant relationship was found between absolute incomes and internal migration. The latter is a considerably less risky and costly proposition for households in the sample, generally requiring only a minimal investment of household resources.

U.S. migration kinship networks also play a critical role in differentiating Mexico-U.S. migrants from internal migrants. Not only do family contacts in the United States increase the likelihood of undocumented Mexico-U.S. migration, they also directly reduce the likelihood of internal migration. By greatly lowering the risks associated with high-paying Mexico-U.S. migration, U.S. migrant networks appear to decrease the attractiveness of

internal migrant work for those who have contacts in the United States.[8] Family contacts in Mexican urban areas, on the other hand, do not play a significant role in migration decisions. The importance of a migration network derives from its ability to provide assistance to migrants when this assistance is most needed, for example, when information about labor markets is scarce, when labor markets are characterized by a high degree of risk, and when the cost of failure is large. Information about internal labor markets, by contrast, appears to be relatively easy to obtain in the households studied here, and the costs and risks associated with internal migration are relatively small.[9]

The logit estimates in table 2 can be used to predict which of the three labor categories each individual in the sample will be assigned to, given that person's personal and household characteristics. These predictions can then be compared ex post with the category in which each person was observed in 1982. The results of such a comparison are presented in table 3. The estimated logit is 86 percent accurate in distinguishing nonmigrants from

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[8]In effect, contacts in the United States make internal migration an inferior "investment" of household resources in a labor portfolio sense. See Tobin (1958) and Markowitz (1959) for concise presentations of portfolio theory. For applications to migration, see David (1974), Roberts (1982), and Taylor (1984, 1986).

[9]The insignificance of internal migration networks does not necessarily contradict findings of past studies that show a significant positive relationship between contacts in urban areas and rural-to-urban migration in less-developed countries. Situations can easily be envisioned in which a lack of experience at domestic destinations makes internal migration quite risky and information about internal labor markets scarce and costly to obtain. In these cases kinship networks to internal destinations may be a key factor in explaining internal migration. In Mexico, for example, internal kinship networks may be more important in some culturally or physically secluded indigenous communities, where language and logistics have made migration to the city difficult in the past.

Table 3

Prediction Accuracy of the Estimated Logit Model:
Total Sample, Migrant Sample, and Correctly Predicted Migrant Sample

	Predicted Classification			
	Nonmigrants	Internal Migrants	Undocumented Mexico–U.S. Migrants	Observed Total
Total Sample				
Nonmigrants	257		18	275
Migrants	41		98	139
Predicted total	298		116	414
Migrant Sample				
Internal migrants	27	50	3	80
Undocumented Mexico–U.S. migrants	14	2	43	59
Predicted total	41	52	46	139
Sample of Correctly Predicted Migrants				
Internal Migrants	—	50	2	52
Undocumented Mexico–U.S. Migrants	—	3	43	46
Predicted Total	—	53	45	98

migrants: of 414 people in the sample, 355 are classified correctly either as migrants or nonmigrants (table 3, first three rows). This level of prediction accuracy is high for a cross-section sample. The predictions show that it is much more difficult to distinguish nonmigrants from internal migrants than from undocumented Mexico-U.S. migrants. Of the 80 people actually observed as internal migrants in 1982, 27 (34 percent) are incorrectly classified as nonmigrants, while only 3 (3.7 percent) are predicted to be Mexico-U.S. migrants (table 3, fourth through sixth rows). Among persons observed as Mexico-U.S. migrants, on the other hand, 14 (23.7 percent) are misclassified as nonmigrants, while only 2 (3.4 percent) are erroneously assigned to the internal migrant category.

The two types of migrants are also easily distinguished in the data (table 3, seventh through ninth rows). Of the 98 people in the sample whom the logit accurately predicts will migrate, 93, or 94.9 percent, are classified correctly as either internal or Mexico-U.S. migrants. Of 52 internal migrants, only 2 are misclassified as Mexico-U.S. migrants, and of 46 Mexico-U.S. migrants, only 3 are erroneously predicted to be internal migrants.

SELECTIVE IMPACTS OF U.S. IMMIGRATION REFORM

An immigration reform on the scale of reforms currently being considered in the U.S. Congress is without precedent. Nevertheless, the estimated logit model can provide some clues about what impacts a major U.S. immigration reform would have on different segments of the undocumented immigrant population. In this section we will speculate on which predicted Mexico-U.S. migrants in the sample would be most vulnerable to a U.S. border reform that reduced the benefits associated with illegal Mexico-U.S. migration.

The probability of being observed as an undocumented Mexico-U.S. migrant is a positive function of the difference between the benefits associated with illegal Mexico-U.S. migration and the benefits associated with other work activities. The findings presented in the last section provide empirical support for such a relationship: high probabilities of illegal Mexico-U.S. migration are associated with the individual and household characteristics that are most likely to enhance the economic benefits of undocumented Mexico-U.S. migration relative to other activities.

The estimated logit coefficients $\hat{\beta}_{US,k}$ and $\hat{\beta}_{Mex,k}$ in table 2 can be used to obtain estimates of the index of household benefits associated with undocumented Mexico-U.S. migration and internal migration relative to nonmigration for each person i in the sample ($\hat{B}_{US}$ and $\hat{B}_{Mex}$, respectively). These benefit indices are estimated using equation (4). Estimated relative benefit indices can then be used to identify borderline Mexico-U.S. migrants, that is, predicted Mexico-U.S. migrants for whom the estimated benefits from illegal Mexico-U.S. migration are lowest. These are people for whom a reduction in U.S. benefits is most likely to tip the scales against illegal Mexico-U.S. migration. A decrease in benefits from illegal Mexico-U.S. migration could result from a change in U.S. immigration policy that reduced the expected gains or that increased the risks associated with illegal Mexico-U.S. migration.

To identify borderline Mexico-U.S. migrants, individuals predicted to be undocumented Mexico-U.S. migrants were ranked according to their estimated benefits from Mexico-U.S. migration. Those in the lowest 30 percent of Mexico-U.S. migrants in terms of estimated benefits were categorized as the borderline migrants. Those in the top thirty percent were put in the category of committed Mexico-U.S. migrants.

Table 4 presents the average characteristics and estimated benefit indices of predicted nonmigrants, internal migrants, undocumented Mexico-U.S. migrants, borderline Mexico-U.S. migrants, and committed Mexico-U.S. migrants. The symbols to the right of the entries in the last two columns indicate the degree to which averages for borderline and committed Mexico-U.S. migrants are significantly different from averages for the three main labor groups.

The top row in the table indicates that the estimated benefits from illegal Mexico-U.S. migration vary considerably across the predicted undocumented Mexico-U.S. migrant subsample. For borderline Mexico-U.S. migrants the index is 0.42. This is significantly lower than the average for all predicted Mexico-U.S. migrants (2.56) and it is only slightly greater than zero, the cutoff point for the nonmigrant category. Estimated U.S. benefits are more than thirteen times higher for the most-committed migrant group (5.75). The advantages of illegal Mexico-U.S. migration for the latter are reflected in the average number of days the most-committed migrants spent in the United States in 1982 (250), which is significantly larger than the average for the borderline Mexico-U.S. migrant subsample (189).

The large disparity in U.S. migration benefits between the borderline and committed Mexico-U.S. migrant groups suggests that the marginal difficulty, or cost, of enforcing U.S. immigration laws would probably increase significantly if the borderline migrants were progressively removed from the United States.

Borderline Mexico-U.S. migrants are not only likely to be vulnerable to changes in U.S. immigration policies; they also appear to have limited alternatives to Mexico-U.S. migration work. Their estimated benefits from internal migration are lower than their estimated benefits from nonmigration

Table 4

Characteristics and Estimated Logit Net Benefit Indices for the Predicted Nonmigrant, Internal Migrant, Undocumented Mexico-U.S. Migrant, and Marginal and Committed U.S. Migrant Subsamples

Variable	Nonmigrants	Internal Migrants	Undocumented Mexico-U.S. Migrants		
			Full Sample	Most Committed 30 Percent	Most Marginal 30 Percent
B_{US}	-8.026	-2.589	2.557	5.749[c,e,g]	0.423[c,e,g]
B_{Mex}	-3.517	2.312	-0.566	0.927[c,e,g]	-1.546[c,e,g]
SIZE	4.617	5.016	5.849	6.000[c,e]	5.875[c,d]
ADULTS	2.815	3.254	3.981	3.733[c,d]	4.313[c,e]
LAND	4.683	7.360	7.100	6.867	5.044[e,f]
INCOME	2.005	2.288	2.575	2.948[b]	1.984
RELY	5.955	5.740	5.531	5.619	5.483
MEXNET	0.725	0.794	0.585	0.400[c,e]	0.563[d]
USNET	0.507	0.429	0.924	1.000[c,e,g]	0.875[c,e]
SEX	0.433	0.492	0.641	0.733[c,e]	0.625[b]
AGE	32.750	29.700	28.170	28.400[c]	26.750[c,d]
ED	3.993	7.119	3.906	4.267[e]	3.875[e]
HEAD	0.369	0.079	0.019	0.000[c,e]	0.000[c,e]
MEXEXP	0.238	6.476	0.689	2.067[c,e,f]	0.281[e]
USEXP	0.631	0.762	5.528	9.233[c,e,g]	1.938[b,d,g]
TIME OUT[a]	—	206.900	217.500	250.000[c,e,g]	189.100[c]

a. Number of days in 1982 spent outside the village as a labor migrant.

b. Significantly different from predicted nonmigrant subsample at the .10 level.

c. Significantly different from predicted nonmigrant subsample at the .05 level.

d. Significantly different from predicted internal migrant subsample at the .10 level.

e. Significantly different from predicted internal migrant subsample at the .05 level.

f. Significantly different from the full predicted undocumented Mexico-U.S. migrant subsample at the .10 level.

g. Significantly different from the full predicted undocumented Mexico-U.S. migrant subsample at the .05 level.

work (-1.5) and significantly lower than those of the most-committed Mexico-U.S. migrants (0.9). The second-best option for the average borderline Mexico-U.S. migrant would be nonmigration, while the average committed Mexico-U.S. migrant, if unable to work in the United States, would be most likely to migrate internally to a Mexican urban area.

What differences in personal and household characteristics account for these large differences in estimated benefits between the two undocumented migrant groups? The two most significant distinguishing features of borderline migrants are their lack of experience in U.S. labor markets and their lack of U.S. migration networks or family contacts in the United States. Borderline migrants, although no younger than the average undocumented Mexico-U.S. migrant, average just 1.9 years of experience in the United States. Although this is significantly higher than the average U.S. work experience of internal migrants and nonmigrants, it is significantly below the average for the full Mexico-U.S. migrant sample. By contrast, the most-committed Mexico-U.S. migrants have an average of 9.2 years of work experience in the United States—significantly more than all other labor groups. Experience in the United States can play a key role in enhancing Mexico-U.S. migrant earnings while reducing migration risk. More-experienced migrants also have a proven track record of success as illegal immigrants in the United States, including an apparent proficiency for evading apprehension by U.S. immigration authorities, for clandestinely reentering the United States when apprehended, or both.

The probability of having family contacts in the United States is also significantly higher for each of the two Mexico-U.S. migrant subgroups than for internal migrants and nonmigrants. However, borderline migrants are

significantly less likely to have U.S. migration networks than are members of the most-committed Mexico-U.S. migrant group. While 87 percent of borderline migrants have access to U.S. migration networks, every committed Mexico-U.S. migrant in the sample had at least one family member living in the United States at the start of 1982. The importance of this variable in differentiating the two Mexico-U.S. migrant groups reflects the central role of migration networks in facilitating illegal Mexico-U.S. migration. Contacts with family members in the United States provide vital assistance to undocumented migrants during the Mexico-U.S. border crossing. They also provide migrants with valuable job information and material and psychic support once migrants are in the United States.

Borderline migrants differ from committed Mexico-U.S. migrants in another important respect. They originate from households that, on average, are no better able to afford the costs of illegal Mexico-U.S. migration than are nonmigrant households. Households of borderline Mexico-U.S. migrants in Mexico have an average income of $1,984 (independent of the migrant's own income contribution). This is slightly lower than the average income of nonmigrant households. By contrast, the most-committed Mexico-U.S. migrants come from households with significantly higher income than nonmigrant households ($2,948). Households of borderline migrants also possess significantly less wealth in the form of land than do households of the most-committed Mexico-U.S. migrants. Wealthy households, it has been noted, are typically more willing to participate in risky labor allocations than are less-wealthy households. Land holdings also indicate the presence of work opportunities on the household-farm. However, both Mexico-U.S. migrant groups come from households with a greater-than-average availability of adult labor on the farm.

The most-committed migrants, on the whole, are distinguished by their apparent ability to afford and control the costs and risks associated with Mexico-U.S. migration. They originate from households in Mexico that not only have Mexico-U.S. migration networks in place but that also are relatively lacking in internal migration networks. The average-committed Mexico-U.S. migrant household in Mexico had only a 40 percent probability of having a family contact elsewhere in Mexico at the start of 1982. This is significantly lower than the corresponding probability for nonmigrant households (72.5 percent) and for internal migrant households (79.4 percent). Committed Mexico-U.S. migrants and their households therefore appear to be closely tied to U.S. labor markets and to have weak links with internal labor markets in Mexico. Borderline Mexico-U.S. migrant households in Mexico are not significantly less likely to have internal migration networks than are nonmigration households. Their likelihood of having family contacts in Mexican towns and cities is significantly lower than that of internal migrants, however.

Interestingly, while households of committed Mexico-U.S. migrants have few family contacts elsewhere in Mexico, the committed migrants themselves have more internal migration experience, on average, than do nonmigrants and other Mexico-U.S. migrants. Many committed Mexico-U.S. migrants appear to have used internal migration as a springboard for financing illegal Mexico-U.S. migration.

Committed migrants are also more likely to be male (73 percent) than their counterparts in Mexico. Borderline Mexico-U.S. migrants are slightly more likely to be male than internal migrants, but there is no statistically significant sex difference between borderline migrants and nonmigrants. Both

U.S. migrant groups are significantly less-educated than internal migrants, they are younger than nonmigrants, and they come from larger households than either migrants or nonmigrants.

CONCLUSIONS

Undocumented Mexico-U.S. migration is a selective process. As the findings in the second part of this paper indicate, illegal Mexico-U.S. migrants differ significantly, in terms of both personal and household characteristics, from nonmigrants and internal migrants in Mexico. These differences are illustrated by the accuracy of the estimated logit model in distinguishing among illegal Mexico-U.S. migrants, Mexican internal migrants and nonmigrants. Undocumented Mexico-U.S. migrants appear on average to be those individuals who are likely to provide their households with the largest net economic gains, at the lowest risk, by working illegally in the United States. They originate from households that have strong economic motives for sending migrants to the United States and that can afford or else control the risks and costs associated with illegal Mexico-U.S. migration.

The undocumented Mexico-U.S. migrant population, however, is far from homogeneous, and this can have important implications for predicting the effects of U.S. immigration laws on Mexico-U.S. migration decisions. The findings in the third part of this paper illustrate that different segments of the undocumented work force have different resources for responding to stronger U.S. border laws and different incentives to seek alternatives to U.S. migration work. A significant drop in expected returns to U.S. migration work, or a rise in the risk of working illegally in the United States, is likely to discourage some undocumented workers from remaining in the United States. Others, however, are likely to be more resilient to U.S. immigration

reform. The difficulty and cost of enforcing border laws can be expected to be higher for the United States government with regard to migrants who have the resources and the economic incentive to withstand an increase in the costs and risks of working illegally in the United States. Moreover, the marginal cost of enforcing new U.S. immigration laws will likely increase if immigration policies succeed in removing the most borderline migrants from the undocumented migrant work force.

These findings may also have important sectoral implications. Unless different types of undocumented Mexico-U.S. migrants are evenly distributed across economic sectors, the effects of U.S. immigration reforms, in terms of their effectiveness at reducing the supply of illegal migrant labor, will not be the same for all sectors of the U.S. economy.

It has been argued that agriculture, with its heavy reliance on undocumented immigrant labor, would be unfairly harmed by proposed U.S. immigration reforms. The California Farm Bureau Federation reports that approximately one-half of all field hands on the state's 82,000 farms are illegal immigrant workers. The United Farmworkers of America, AFL-CIO, claims that the numbers are much higher. Growers from California and other states have mounted extensive lobbying efforts in Washington to oppose changes in federal immigration laws that they feel could reduce the supply of illegal foreign workers to U.S. agriculture (Washington Post, 1985; Wall Street Journal, 1983).

The potentially adverse effect of U.S. border reforms on agriculture will be compounded if undocumented workers in agriculture are more vulnerable to changes in immigration laws than illegal workers in other sectors. As indicated above, undocumented workers from Mexico who have experience and

contacts in the United States tend to be concentrated in the urban manufacturing sector rather than in agriculture, where average wages are lower and employment is less stable. The findings reported in the third part of the present study suggest that inexperienced migrants and migrants without U.S. migration networks are likely to be most susceptible to increased across-the-board enforcement of U.S. immigration laws. Thus undocumented migrant workers in agriculture may be more vulnerable to U.S. immigration reforms than their counterparts in other economic spheres. Further study is needed to identify not only differences in the reliance on undocumented immigrant workers in different sectors of the U.S. economy, but also differences in these workers' susceptibility to U.S. immigration reforms.

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